

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 59-103338

(43)Date of publication of application : 14.06.1984

(51)Int.Cl.

H01L 21/302
C23F 1/00

(21)Application number : 57-213135

(71)Applicant : FUJITSU LTD

(22)Date of filing : 03.12.1982

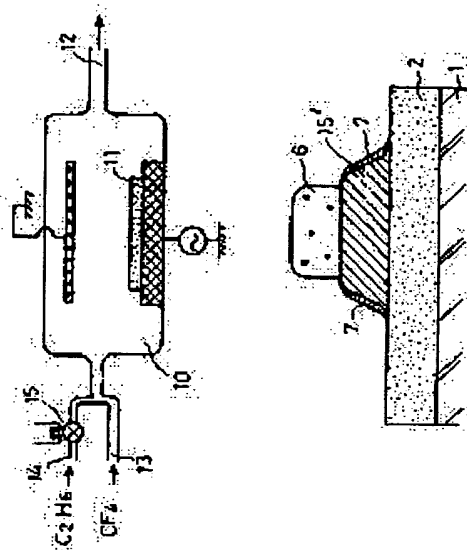
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(54) ETCHING METHOD OF POLYCRYSTALLINE SILICON FILM

(57)Abstract:

PURPOSE: To obtain a side surface of Si film pattern in the desired side wall shape by increasing or decreasing a partial pressure of ethane gas when executing the active ion etching to a polycrystalline Si film with the mixed gas of fluoric gas and ethane gas.

CONSTITUTION: A resist film 6 of the specified pattern is provided on the polycrystalline Si film 5 deposited on a semiconductor substrate 1 and the film 5 is etched as follow using said resist film as the mask. A sample 11 is put into an etching chamber 10 having the exhaust port 12 at the one end and CF₄ gas inflow port 13 and C₂H₆ inflow port 14 at the other end and electrodes are disposed on the sample 11 with the specified interval. With such structure, a degree of opening or closing of electromagnetic valve 15 provided at the inflow port 14 is controlled automatically with a microcomputer and thereby the CF₄ gas pressure is kept constant to 0.2Torr. Meanwhile, the ethane gas is first set to 0.1Torr and is gradually reduced to 0 and then it is reset to the initial pressure. Thereby, a polymer film 7 generated at the side surface of film 5' as described above is shaped as desired.



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